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United States Patent [19]**Elwakil****[11] Patent Number: 5,543,219****[45] Date of Patent: Aug. 6, 1996**

[54] **ENCAPSULATED MAGNETIC PARTICLES PIGMENTS AND CARBON BLACK, COMPOSITIONS AND METHODS RELATED THERETO**

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Related U.S. Application Data

[63] Continuation of Ser. No. 334,808, Nov. 4, 1994, abandoned, which is a continuation of Ser. No. 909,977, Jul. 7, 1992, abandoned, which is a continuation-in-part of Ser. No. 879,936, May 8, 1992, abandoned.

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[52] **U.S. Cl.** **428/402.24; 106/20 R; 252/62.54; 428/402; 428/407**

[58] **Field of Search** **252/62.54; 428/402.24; 428/402; 106/20**

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[57]

ABSTRACT

Encapsulated particles, such as magnetic particles, colored pigments, or carbon black, with high chemical affinity for ink vehicles. The encapsulated particles of this invention are suitable for printing inks, as well as for magnetic recording systems, such as audio and video tapes and magnetic storage disks, when the encapsulated particles are magnetic particles. The encapsulated particles comprise particles having a coating on their surface, said coating comprising in one embodiment an ionomer and in another embodiment, an oil, such as soya oil, and optionally a thixotropic agent, and/or a binder resin. The method of the present invention for making such encapsulated particles avoids the use of volatile organic solvents and provides printing inks and coating compositions comprising such encapsulated particles, that also avoid the use of volatile organic solvents. Inks may be readily formulated without the need for the complicated and expensive flushing process, by simply dispersing the encapsulated colored pigment or carbon black in the desired vehicle.

7 Claims, No Drawings